

## CLAIMS

What is claimed is:

1. A method of treating sensitive teeth comprising:  
  
attaching a fluoride releasing glass composition to a person's tooth; and  
  
allowing fluoride to be slowly released over time in order to reduce chronic and/or acute tooth sensitivity.
2. The method as recited in claim 1, wherein the fluoride releasing glass composition has the general empirical formula given below, expressed in approximate weight percent of the element:  
  
phosphorus: 16-24  
  
fluorine: 5-30  
  
oxygen: 20-40  
  
and at least one of sodium, potassium, lithium, or aluminum in an amount up to a total of about 40 weight percent and optionally, up to about 5 weight percent of boron and/or silicon.
3. The method as recited in claim 2, wherein fluorides and/or oxides of glass modifiers are included in the composition.

4. The method as recited in claim 3, wherein the fluoride ions are included in compounds selected from the group consisting of aluminum fluoride, sodium hydrogen fluoride, sodium fluoride, calcium fluoride, magnesium fluoride, and potassium fluoride.
5. The method as recited in claim 2, further comprising one or more other glass modifiers.
6. The method as recited in claim 5, wherein the other glass modifiers are calcium, magnesium, and/or zinc.
7. The method as recited in claim 5, wherein the other glass modifiers are included in an amount up to about 10 weight percent.
8. The method as recited in claim 2, wherein the composition includes a combined weight percent of at least about 16 percent of sodium and potassium.
9. The method as recited in claim 2, wherein the composition includes a combined weight percent of between about 19 and about 26 percent of sodium and potassium.
10. The method as recited in claim 2, wherein aluminum is included in an amount of at least about 3 weight percent.

11. The method as recited in claim 2, wherein aluminum is included in an amount of between about 4 and about 10 weight percent.
12. The method as recited in claim 2, wherein at least about 25 weight percent oxygen is included in the composition.
13. The method as recited in claim 2, wherein between about 25 and about 35 weight percent oxygen is included in the composition.
14. The method as recited in claim 2, wherein phosphorus is included in an amount of about 17 to about 23 weight percent.
15. The method as recited in claim 2, wherein at least about 12 weight percent of fluoride is included in the composition.
16. The method as recited in claim 2, wherein between about 15 and about 25 weight percent fluoride is included in the composition.
17. The method as recited in claim 2, wherein the composition provides a fluoride retention of at least about 45 percent at a melting temperature of no more than about 650° C over 45 minutes.

18. The method as recited in claim 2, wherein the composition has a solubility in the range of about 5 to about 10,000.

19. The method as recited in claim 2, wherein the composition has a solubility in the range of about 5 to about 100.

20. The method as recited in claim 2, wherein the composition is provided in powder form.

21. The method as recited in claim 20, wherein the powder form of the glass composition comprises powder grains having a grain size of less than about 38 microns.

22. The method as recited in claim 20, wherein the powder form of the glass composition comprises powder grains having a grain size of less than about 106 microns.

23. The method as recited in claim 20, wherein the powdered composition is incorporated in one or more dental materials.

24. The method as recited in claim 23, wherein the dental material is selected from the group consisting of a dental amalgam, a fissure sealant resin, a composite bonding material, an orthodontic appliance, a dental prosthetic, a resin varnish, and an oral surgery implant.

25. The method as recited in claim 2, wherein the composition comprises at least one pellet that may be attached to a tooth using dental cement.

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